STEREO POWER AMPLIFIER/GRAPHIC EQUALIZER

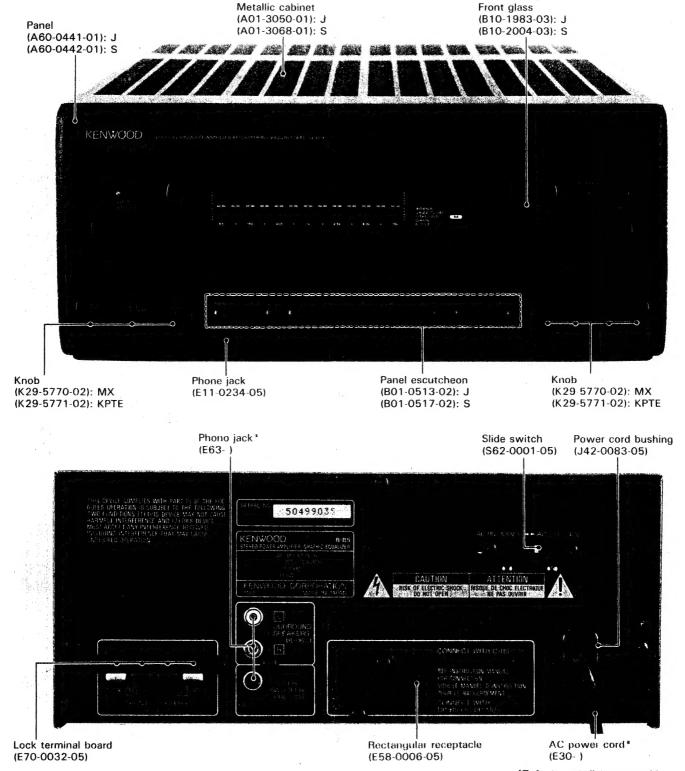
## B-B5/B7

## SERVICE MANUAL (UD-501/701M)

## KENWOOD

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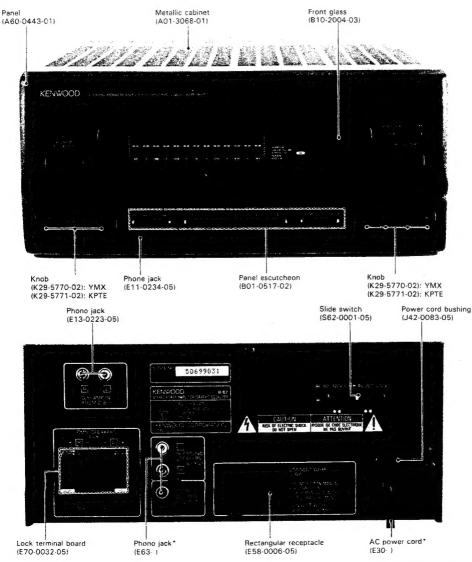
**B-B5** 



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PC BOARD (Component side view)	9	SPECIFICATIONS	20
SCHEMATIC DIAGRAM	11		

B-B7



#### CIRCUIT DESCRIPTION

#### PORT LAYOUT Microprocessor µ PD78042GF-038(IC11-X09) FL 8 GRID 23 SEGMENT REC R/M EFECT NB $\triangleleft$ 2 CHAR $\triangleright$ A1 HIT 3 55~70 63~68 72~77 1~7,80 9,10 LC7522 6 SCAN OFF CHAR ▽ MEM 13~16 **PROTECTION** 4 RETURN PRESENCE DISP POWER 5 HEAD PHONE-12 STAND BY (LED)μPD78042 51 50 OMNI 19 control FRONT MUTE → OMNI/REAR MUTE + HEAD PHONE MUTE -53 18 SUPER WOOFER -SERIAL BUSY 36 MUTE 42 SERIAL DATA 45 FRONT RELAY OMNI RELAY REAR RELAY 46 38 39 40 Destination area identification

GE A/D input

## B-B5/B7

#### CIRCUIT DESCRIPTION

#### Pin Description

Pin No.	Pin Name	1/0	Name	Description
1	P94	0	GRID 6	FL driver output Grid 6
2	P93	0	GRID 5	FL driver output Grid 5
3	P92	. 0	GRID 4	FL driver output Grid 4
4	P91	0	GRID 3	FL driver output Grid 3
5 :	P90	0	GRID 2	FL driver output Grid 2
6	P81	0	GRID 1	FL driver output Grid 1
7	P80	0 :	GRID 0	FL driver output Grid 0
8	Vdd			+5V ,
9	P27	0	GE. IC (CLOCK)	Gleico IC (LC7522) → CLK (Clock terminal)
10	P26	0	GE. IC (DATA)	Gleico IC (LC7522) → DI (Data terminal)
11	P25 SI0/SB0	1	PROTECTION	Protection detection Low: NON PROTECTION, High: PROTECTION
12	P24 BUSY	1	HEAD PHONE	Headphone input detection Low: NON HEADPHONE High: HEADPHONE IN
13	P23 STB	0	KEY RETURN 3	Key return 3
14	P22 SCK1	0	KEY RETURN 2	Key return 2
15	P21 SO1	0	KEY RETURN 1	Key return 1
16	P20 SI1	O (I)	KEY RETURN 0	Key return 0
17	RESET		RESET	Microcomputer set terminal
18	P74	0	HEAD PHONE MUTE	Headphone mute Low: MUTE OFF High: MUTE ON
19	P73	0	STAND BY LED	Standby LED
20	AVss			GND terminal
21	P17 AN17	1	NC	Unused
22	P16 ANI6	1	AD (16kHz)	Analog input 16kHz
23	PP15 ANI5	1	AD (6.3kHz)	Analog input 6.3kHz
24	P14 ANI4	1	AD (2.5kHz)	Analog input 2.5kHz
25	P13 ANI3	1	AD (1kHz)	Analog input 1kHz
26	P12 ANI2	1	AD (400Hz)	Analog input 400Hz
27	P11 ANI1	1	AD (160Hz)	Analog input 160Hz
28	P10 ANIO	1	AD (63Hz)	Analog input 63Hz
29	AVdd			+5V
30	AVref			+5V
31	P04 XT1	- 1	Vss	GND
32	XT2			
33	Vss			GND
34	X1	1		Oscillator 4.19MHz
35	X2			Oscillator 4.19MHz
36	P37	0	SW MUTE	Super woofer mute Low: S.W. OFF High: S.W. ON
37	P36 BUZ	0	POWER RELAY	Power relay Low: POWER OFF High: POWER ON
38	P35 PCL	1	UD701/UD501	UD701/UD501 destination area changeover Low: UDA501 High: UD701
39	P34 TI2	1	HIT MASTER	HIT MASTER destination area changeover Low: HIT MASTER OFF High: HIT MASTER ON
40	P33 TI1	1	OMN I	OMNI destination area changeover Low: OMNI OFF, High: OMNI ON

## B-B5/B7

#### **CIRCUIT DESCRIPTION**

Pin No.	Pin Name	1/0	Name	Description
41	P32 TO2	0	REAR RELAY	Rear speaker relay Low: RELAY OFF, High: RELAY ON
42	P31 TO1	-0	SDATA	Serial data terminal
43	P30 TO0	-0	SBUSY	Serial busy terminal
44	P03 INTP3/Ci0	1	FRONT MUTE	Front mute Low: MUTE ON High: MUTE OFF
45	P02 INTP2	1	FRONT RELAY	Front speaker raly Low: RELAY OFF High: RELAY ON
46	P01 INTP1	1	OMNI RELAY	Omni speaker relay Low: RELAY OFF High: RELAY ON
47	P00 INTP0/TI0	1	CE	Backup terminal
48	IC (Vpp)			GND
49	P72	1	Vss	GND
50	P71	0	OMNI B	Omni TC terminal → B
51	P70	0	OMNI A	Omni TC terminal → A
52	Vdd			+ 5V
53	P127 FIP33	0	OMNI MUTE	Omni mute Low: MUTE OFF High: MUTE ON
54	P126 FIP32	0	SEGMENT 22	FL drive output segment 22
55	P125 FIP31	0	SEGMENT 21	FL drive output segment 21
56	P124 FIP30	0	SEGMENT 20	FL drive output segment 20
57	P123 FIP29	0	SEGMENT 19	FL drive output segment 19
58	P122 FIP28	0	SEGMENT 18	FL drive output segment 18
59	P121 FIP27	0	SEGMENT 17	FL drive output segment 17
60	P120 FIP26	0	SEGMENT 16	FL drive output segment 16
61	P117 FIP25	0	SEGMENT 15	FL drive output segment 15
62	P116 FIP24	0	SEGMENT 14	FL drive output segment 14
63	P115 FIP23	0	SEGMENT 13	FL drive output segment 13
64	P114 FIP22	0	SEGMENT 12	FL drive output segment 12
65	P113 FIP21	0	SEGMENT 11	FL drive output segment 11
66	P112 FIP20	0	SEGMENT 10	FL drive output segment 10
67	P111 FIP19	0	SEGMENT 9	FL drive output segment 9
68	P110 FIP18	0	SEGMENT 8	FL drive output segment 8
69	P107 FIP17	0	SEGMENT 7	FL drive output segment 7
70	P106 FIP16	0	SEGMENT 6	FL drive output segment 6
71	Vload			-30V
72	P105 FIP15	0	SEGMENT 5	FL drive output segment 5
73	P104 FIP14	0	SEGMENT 4	FL drive output segment 4
74	P103 FIP13	0	SEGMENT 3	FL drive output segment 3
75	P102 FIP12	0	SEGMENT 2	FL drive output segment 2
76	P101 FIP11	0	SEGMENT 1	FL drive output segment 1
77	P100 FIP10	0	SEGMENT 0	FL drive output segment 0
78	P97 FIP9	0	NÇ	Unused
79	P96 FIP8	0	NC	Unused (A logic terminal)
80	P95 FIP7	0	GRID 7	FL driver output grid 7 (B logic terminal)

#### 1. Test mode by means of main unit keys Or

CIRCUIT DESCRIPTION

#### (1) Setting method

 Plug the power cord in the AC electrical outlet while pressing the FLAT key.

#### (2) Cancellation method

 The test mode set at the beginning is cancelled when the power cord is unplugged from the AC electrical outlet.

#### (3) Contents

- 1 Automatic POWER ON
  - The POWER turns necessarily ON, and all functions are initialized when the power cord is plugged into the AC electrical outlet while pressing the FLAT KEY.
- 2 ALL LIT mode
  - All Fl and all LED light up without fail when thge power cord is plugged into the AC electrical outlet while pressing the FLAT KEY. After that, the equipment switches to the ordinary indication mode when any key of the main unit is operated.
- 3 Check of the circuit operation by means of the main unit keys
  - a. Relay operation check test The FRONT, OMNI ↔ FRONT, S switching operation takes place every time the MEMORY key is pressed, and the "OMNI 123" ↔ "PRESENCE all lit up" appears accordingly on the display during 5 seconds.
- b. Test of the super woofer The super woofer is turned ON/OFF cyclically every time the REF/MANU key is pressed, and the "SUPER WOOFER" segment of the FL turns ON/OFF accordingly.
- Operations of the other main unit keys in the test mode

The operations of the test mode and the workings of the list of workings are carried out.

### Operations and workings of the graphic equalizer in test mode

Name of the key	Workings
EQ DISPLAY	Changeover of the FL display mode The EQ diaply, inverted spectrum analyzer display, and the display of the Niagara mode (the short circuit of the GRID and the short circuit of the SEGMENT can be checked) are switched cyclically.
1	EQ all frequency center     The booth cut extents of all bands used are set at the center.
2	EQ all frequency MAX     The booth cut extents all bands used are set at MAX.
3	EQ all frequency MiN     The booth cut extents of all band sused are set at MIN.

#### 2. Initialization

#### (1) Setting method

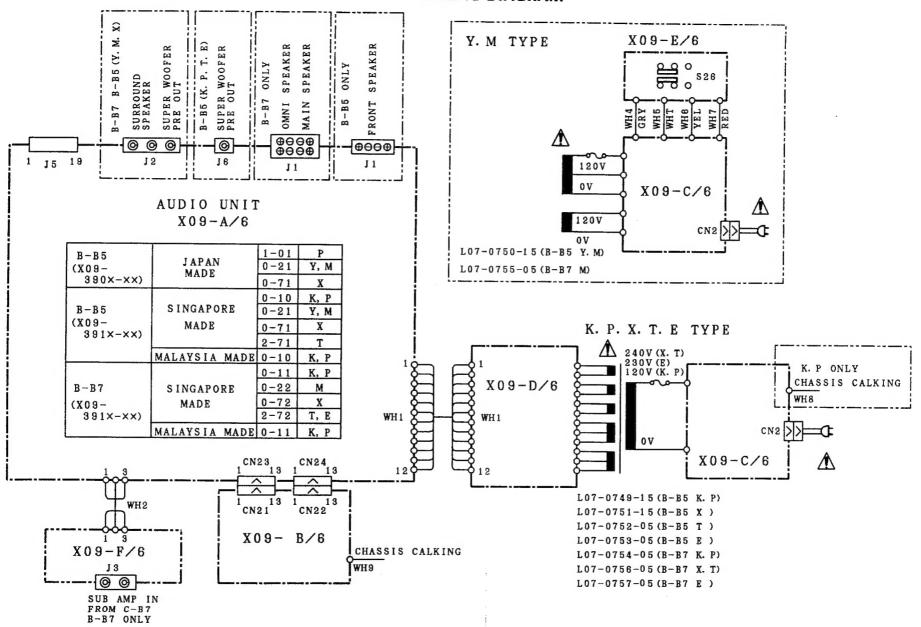
- The equipment is initialized by plugging the power cord in the AC electrical outlet while pressing the EQ MEMORY key.
- The equipment is initialized when the power cord is unplugged and then plugged in the AC electrical outlet during the test mode by means of the main unit keys and the test mode by means of serial communication.

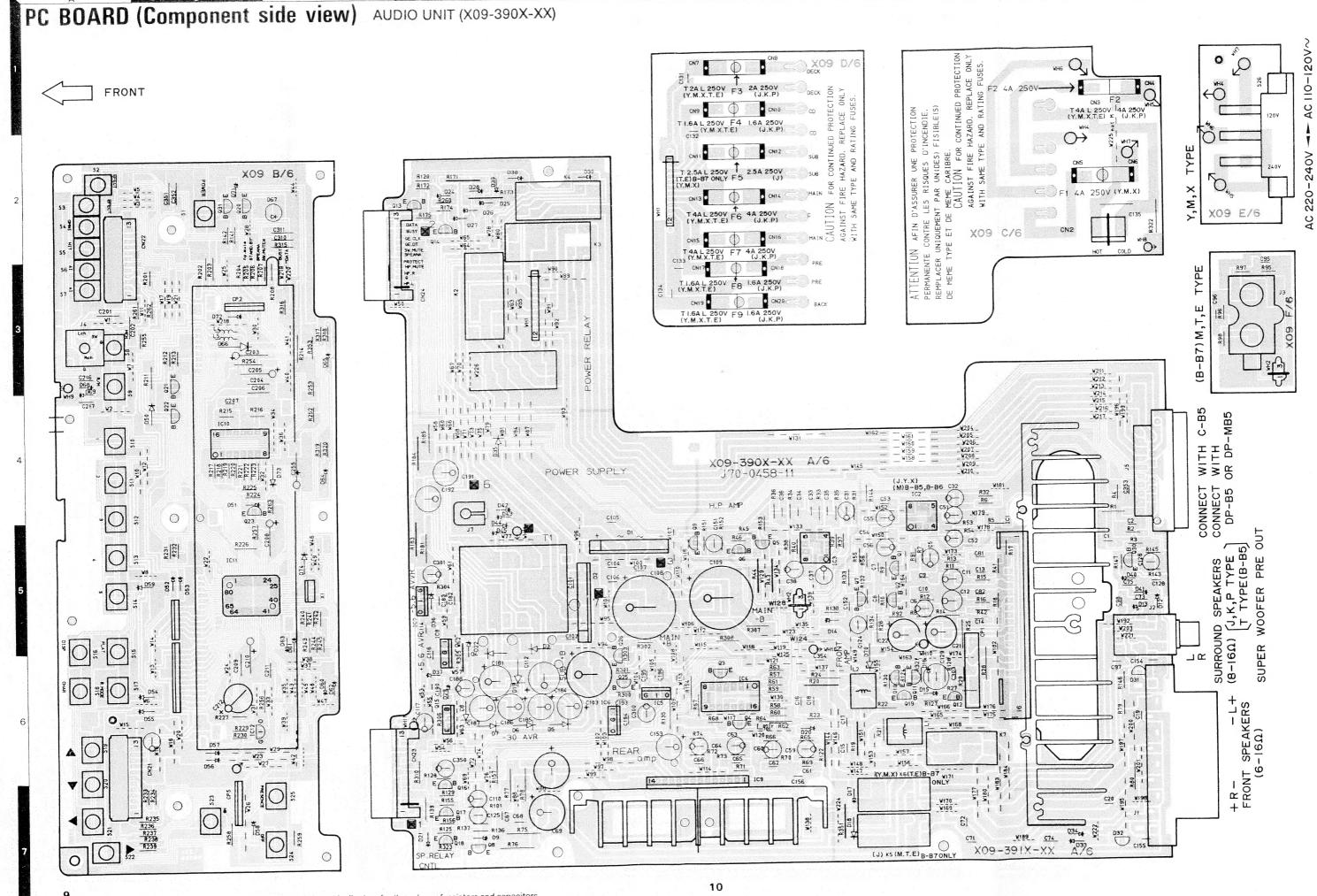
#### (2) Contents

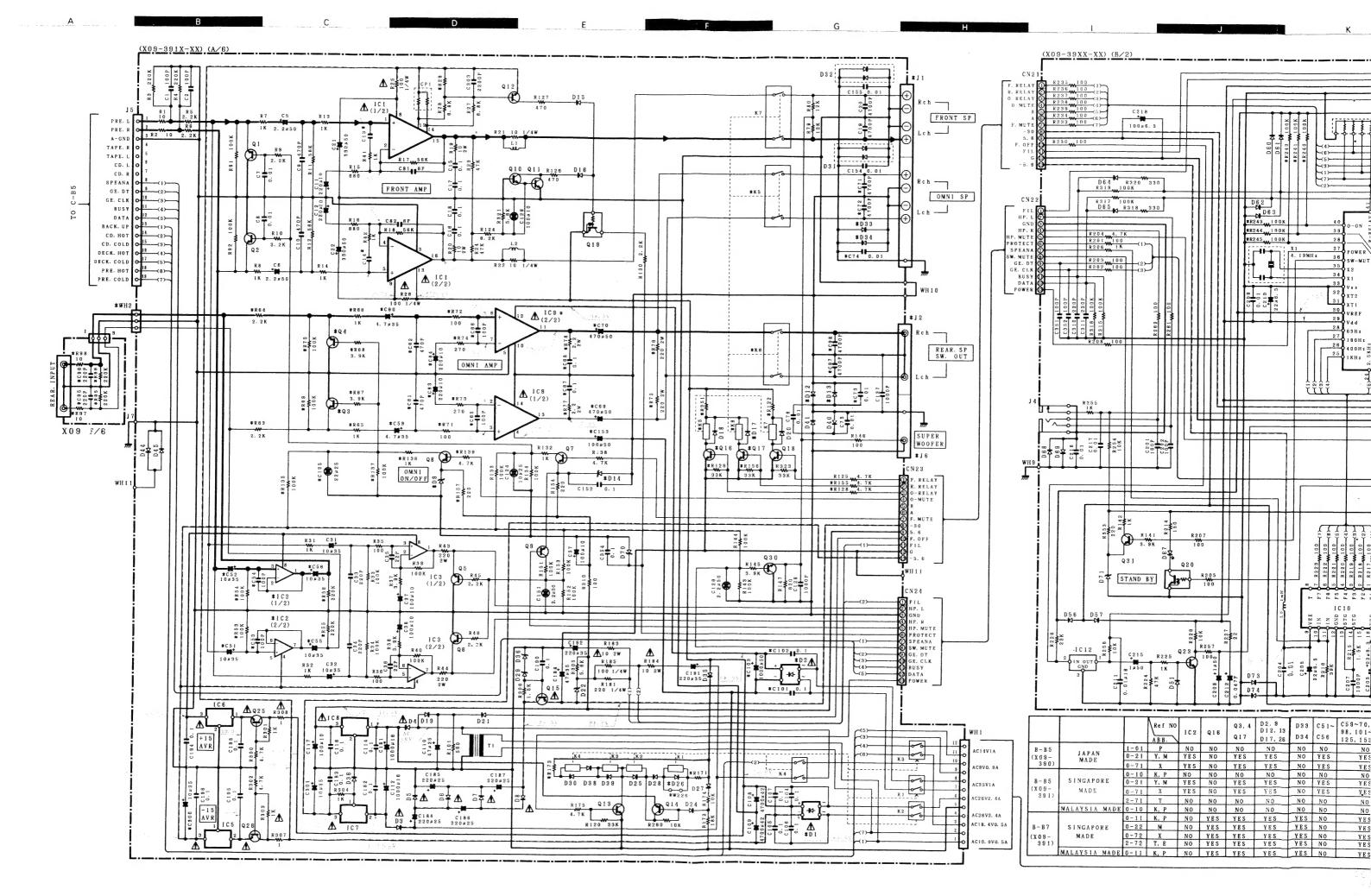
All functions are initialized (Including test mode).

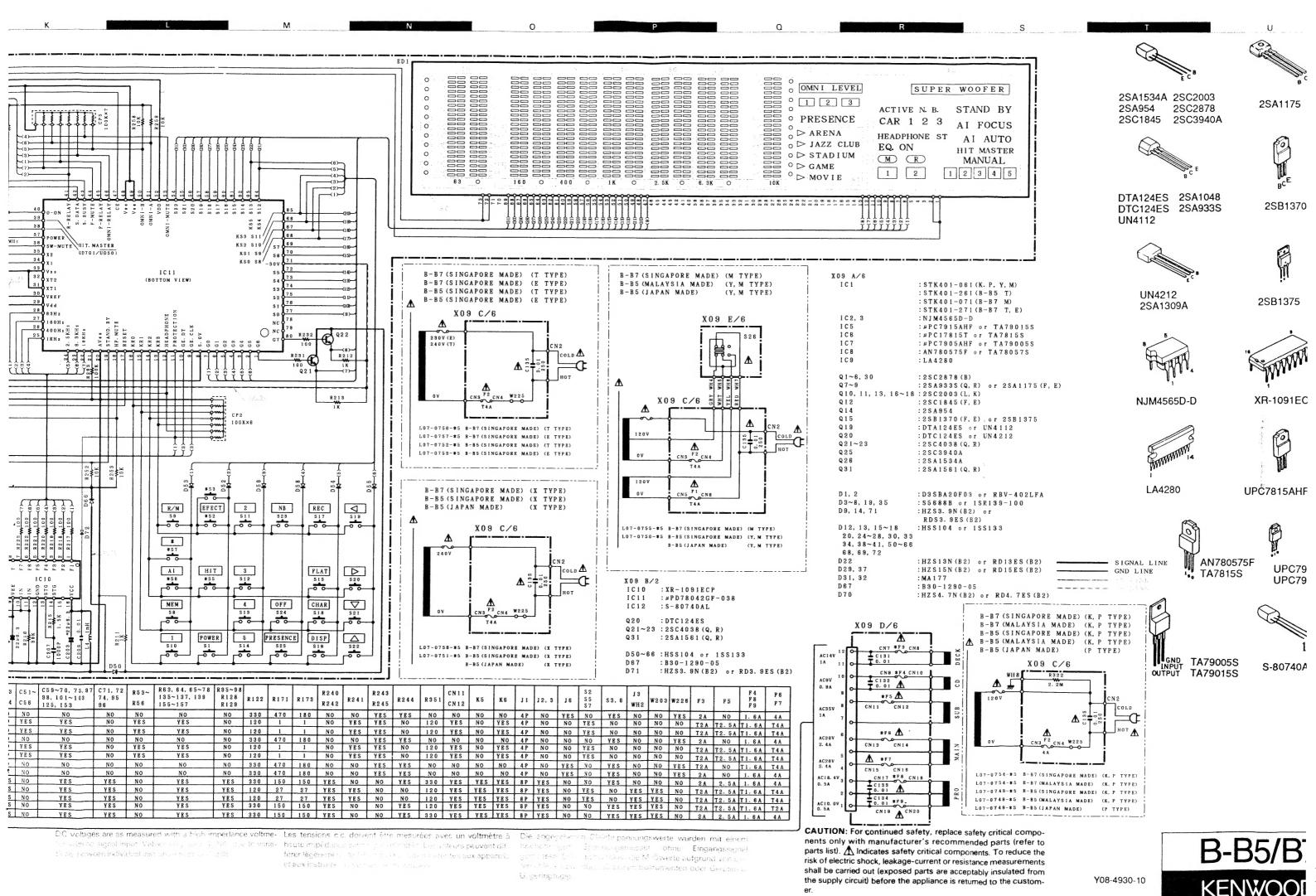
## B-B5/B7 B-B5/B7

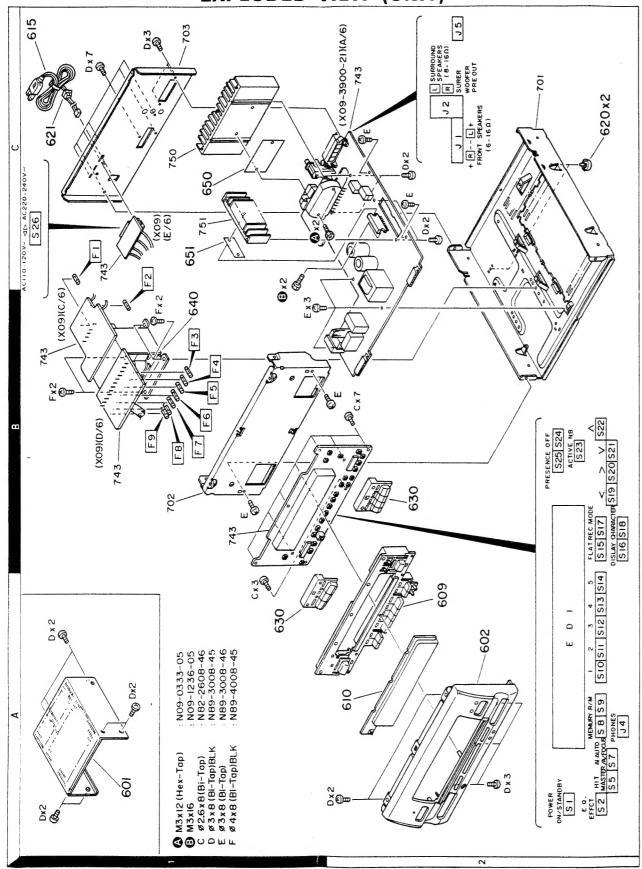
#### **WIRING DIAGRAM**











Parts with the exploded numbers larger than 700 are not supplied.

## **PARTS LIST**

1	615 1C E30-259-15 AC 615 1C E30-259-15 AC 615 1C E30-259-15 AC 615 1C E30-245-05 AC
S	615 1C E30-2592-15 AC 615 1C E30-2650-05 AC 615 1C E30-2717-05 AC
S	615 1C E30-2721-05 AÇ
10	H50-0761-04 ITEM H50-0762-04 ITEM H50-0763-04 ITEM H50-0764-04 ITEM H50-0893-04 ITEM
Color   Colo	H10-5611-02
S	H10-5613-02 H10-5614-02 H10-5614-02
C	* H13-0158-14 (
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Color   Colo	1A,2B * K29-5770-02 KNØB 1A,2B * K29-5771-02 KNØB
S	604 1B * L07-0756-05 POWER 640 1B * L07-0754-05 POWER 640 1B * L07-0755-05 POWER
Color   Colo	640 1B * L07-0757-05 P0WER C 1A,2B N82-2608-46 BINDI E 1B,2C N89-3008-46 BINDI E 1B,2C N89-3008-46 BINDI
C	AUDIO UNIT (X09
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M:Other Areas

K:USA T:England

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## **PARTS LIST**

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\* New Parts

### **PARTS LIST**

9.ON Re-marks J.JAPAN MADE
S.SINGAPORE MADE
W.MALAYSIA MADE
5.B-B5
7.B-B7 2020 r-10 C 10 C- 10 2 ເດ 1010000 C 10 C 10 5000 10.10 0101010 טי טי Destination YMX KPTE KPTE AX YAX KPTE KPTE YMX YMX KPTE KPTE KPTE KPTE KPTE YXX KPTE KPTE KPTE KPTE Y W X XWX XMX Æ HIT MASTER KEY BOARD KEY BOARD KEY BOARD VOLTAGE SELECTOR EFECT VOLTAGE SELECTOR POWER, EQ EFI POWER, EQ EFE EQ EFECT HIT MASTER HIT MASTER 歌 Description 品名/ MAGNETIC RELAY MAGNETIC RELAY MAGNETIC RELAY MAGNETIC RELAY PUSH SWITCH SWITCH SWITCH SWITCH SWITCH E SWITCH SLIDE SWITCH DIØDE DIØDE ZENER DIØDE SWITCH SWITCH SWITCH SWITCH SWITCH DICOE DINDE DIODE DIODE PUSH S PUSH S PUSH S PUSH S SLIDE D100E 0100E 0100E 0100E DIODE DIODE ZENER ZENER ZENER DIODE Les articles non mentionnes dans le Parts No. ne sont pas fournis. ZENER DIØDE DIØDE DIØDE PUSH PUSH PUSH PUSH \$51-2094-05 \$76-0005-05 \$76-0005-05 \$76-0005-05 \$76-0005-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S40-1064-05 S62-0001-05 HSS104 HSS104 1SS133 1SS133 HZS3.9N(B2) RD3.96S(B2) HSS104 1SS133 HSS104 1SS133 Š RBV-402LFA S5688B 1SR139-100 HZS3.9N(B2) RD3.9ES(B2) 562-0001-05 D3SBA20F03 BBV-402LFA D3SBA20F03 D3SBA20F03 RBV-402LFA HSS104 1SS133 S5686B 1SR139-100 HSS104 155133 RB7219 HZS13N(B2) RD13ES(B2) HSS104 \* HSS104 1SS133 HZS15N(B2) Parts felle ohne Parts No. werden nicht geliefert. œ HSS104 15S133 1SS133 HSS104 1SS133 Parts without Parts No. are not supplied. 岩 Address New Parts 位 课 ŝ 幸 -25 -25 E E E E -28 2598 450 44 444 Ref. 014 015 015 015 015 019 019 020 027 526 020 021 022 022 24 4 24 4 24 4 24 \$5 \$7 \$7 \$8 \$26 S3 S5 S5 003 00000 5 Re · marks 2222 2222 2 8 Destination of the first of the M YM KPXTE PX KPTE KPXTE YMX KPTE MX KPTE XXX XMX 2W 1/4W 1W 24 24 29 29 1749 PHASE COMPENSATION COIL SMALL TIXED INDUCTOR(1.0MH,K) POWER TRANSFORMER RESONATOR (4.194MHZ) T2A) T1.6A) T1.6A) 1.6A) SCREW (3X12) SCREW (3X12) SCREW (3X16) HEAD TAPTITE SCREW 22222 22222 T2.5A) T2.5A) 2.5A) T4A) # (250V (250V (250V (125V (250V (250V (250V (250V /# Description 0.22X2 100KX6 100KX7 10 220 5.6K 2.2M 120 1.0 150 180 27 220 100 220 220 220 2.2 150 品名。 MAGNETIC RELAY (SEMKØ)
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M:Other Areas P:Canada

X: Australia T:England K:USA

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Y:PX(Far East, Hawaii) Y:AAFES(Europe)

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### **PARTS LIST**

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## SPECIFICATIONS

(For U.K. and Europe)

(B_B5)	(8-87)
(20-0)	
Power amplifier section	Power amplifier section
Rated power output	
	(DIN)
	Total harmonic distortion
(63 Hz ~ 12.5 kHz, 0.7 % THD, 6 \(\Omega\))	0 7% (40 Hz ~ 20 kHz, 32 W, 6 D)
(DIN)	Frequency response
32 W + 32 W (1 kHz, 6 Ω)	25 Hz - 70 kHz, +0 dB, -1.0 dB
Total harmonic distortion	Signal to noise ratio
0.7 % (40 Hz ~ 20 KHz, 30 W, 6 12)	105 dB (IHF'66)
Frequency response	Input sensitivity / Impedance
20 Hz ~ 70 KHz, + 0 dB, - 1.0 dB	
Signal to noise ratio	
log Juli ap Cot	Graphic equalizer section
Input sensitivity / impedance	Individual channel 63 Hz, 160 Hz, 400 Hz,
77 / 4 / AU 007	1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz
Output level / Impedance	Equalizer characteristic variable range
SUPER WOOFER PRE DOI 2.0 v / 500 12	± 10 dB
Graphic aqualizar section	[General]
Traditional channel 63 Hz 160 Hz 400 Hz	Cower consumption
1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz	M: 120 mm (4.3 / 4")
Equalizer characteristic variable range	D:319 mm (12:9 / 16")
8P 0L =	Weight (net) 5.8 kg (12.8 lb)
[General]	
Power consumption	
Dimensions	
H: 120 mm (4-3 / 4")	
D:319 mm (12-9 / 16")	
Weight (net) 5.8 kg (12.8 lb)	

## SPECIFICATIONS

For other countries)

Power amplifier section Rated power output

. 0.09 % (1kHz,1/2 Rated power, 6 Ω) 20 Hz ~ 70 kHz, + 0 dB, - 1.0 dB 200 mV / 47 kΩ .. 2.0 V / 600 Ω 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz ± 10 dB 30 W + 30 W (EIAJ, 6 \Omega) .... 8 W + 8 W (EIAJ, 8 \Omega) 105 dB (IHF'66) 63 Hz, 160 Hz, 400 Hz, 110 W Equalizer characteristic variable range SUPER WOOFER PRE OUT Input sensitivity / Impedance Graphic equalizer section individual channel Total harmonic distortion Output level / Impedance Frequency response Signal to noise ratio Power consumption FRONT REAR. [General]

(B-87)

Power amplifier section Rated power output

FRONT

35 W + 35 W (EIAJ, 6 \(\Omega\)) Total harmonic distortion REAR ..

0.09 % (1kHz,1/2 Rated power, 8 \Omega) .. 20 Hz - 70 kHz, + 0 dB, - 1.0 dB 105 dB (IHF'66) 200 mV / 47 kΩ Input sensitivity / Impedance Frequency response Signal to noise ratio

63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz Equalizer characteristic variable range Graphic equalizer section Individual channel

H: 120 mm (4-3 / 4") D: 319 mm (12-9 / 16") W: 270 mm (10-5 / 8") .. ± 10 dB 120 W Power consumption Dimensions. [General]

## **B-B5/B7**

## (For U.S.A. and Canada)

B-B<sub>2</sub>)

Power amplifier section Rated power output

nels driven, at 6  $\Omega$  from 40 Hz to 20 kHz with no 28 watts per channel minimum RMS, both chanmore than 0.4 % total harmonic distortion.

Total harmonic distortion

REAR

.. 0.4 % (40 Hz ~ 20 kHz, 28 W, 6 \Oxidsy 20 Hz ~ 70 kHz, + 0 dB, - 1.0 dB 105 dB (IHF'66) Signal to noise ratio Frequency response

200 mV / 47 kΩ 2.0 V / 600 Ω Output level / Impedance SUPER WOOFER PRE OUT Input sensitivity / Impedance

1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz Equalizer characteristic variable range Graphic equalizer section Individual channel

H: 120 mm (4-3 / 4") D: 319 mm (12-9/16") 5.8 kg (12.8 lb) W: 270 mm (10-5 / 8") Power consumption Dimensions. General

5.8 kg (12.8 lb)

Weight (net)

Weight (net)

W: 270 mm (10-5 / 8")

Dimensions

Weight (net)

**SPECIFICATIONS** 

Power amplifier section Rated power output

FRONT

nels driven, at 8  $\Omega$  from 40 Hz to 20 kHz with no more than 0.4 % total harmonic distortion. 10 watts per channel minimum RMS, both chan-

nels driven, at 6  $\Omega$  from 40 Hz to 20 kHz with no more than 0.4 % total harmonic distortion.

30 watts per channel minimum RMS, both chan-

Total harmonic distortion

0.2% (40 Hz ~ 20kHz, 30W, 6 1)

... 25 Hz - 80 kHz, +0 dB, -1.0 dB Frequency response Signal to noise ratio

200 mV / 47 kΩ 105 dB (IHF'66) Input sensitivity / Impedance

Graphic equalizer section Individual channel..

± 10 dB

1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz Equalizer characteristic variable range

W: 270 mm (10-5 / 8") H: 120 mm (4-3 / 4") D: 319 mm (12-9/16") Power consumption Dimensions. [General]

5.8 kg (12.8 lb)

Weight (net)

# KENWOOD CORPORATION Alive Marke, 2-5, 1-chome Shibuya-ku, Takiyo 150, Japan

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wood follows a policy of continuous advancements in development in reason specifications may be changed without notice.

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Component and circuitty are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional

component variations through use of parts list.

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